

CURRICULUM VITAE

Personal data

Name: Reuven Ianconescu

Born: Bucharest, Romania, 15 May 1960

Citizenship: Israeli

Address: 26 Rothenstreich str., Tel Aviv

Military service: 1980-1985 (sergeant major, reserve)

1. Academic education

2003-2005 Postdoctoral research, Weizmann Institute of Science,
Supervisor: Prof. Eli Pollak

2002-2003 Postdoctoral research, Tel-Aviv University,
Supervisor: Prof. Larry Horwitz

1995 Ph.D. Tel-Aviv University, Faculty of Electrical Engineering, Dept. of
Physical Electronics (direct Ph.D track) Thesis: Propagation and
diffraction of collimated Pulsed Beams, Advisor: Prof. Ehud Heyman

1987 B.Sc. summa cum laude, Tel-Aviv University, Faculty of Electrical
Engineering

2. Academic employment

2005 - date Shenkar College of Engineering and Design, Electrical Engineering
department - **Senior lecturer, member of the academic staff**

2003 - 2013 Bar Ilan University, Faculty of Electrical Engineering, **Senior
lecturer, adjunct**

2011 - 2015 Shamoon College of Engineering, **Senior lecturer, adjunct**
2010 Afeka college of engineering, **Senior lecturer, adjunct**

1988-1994 Tel Aviv University – **teaching assistant**

3. Academic and R&D activities

3.1 Research activities

2007 - date **Shenkar College of Engineering and Design:**
 electrohydrodynamic (EHD) lifters, radiation from plasma charged
 particles, guided waves and crosstalk in multiconductor
 communication, transmission lines radiation losses model
2014 - date **Tel Aviv University,** radiation from free electrons, electron
 bunching, super-radiance
2009 - date **Weizmann Institute of Science,** statistical mechanics, Kramers'
 turnover theory, diffusion
2001-2003 **Tel Aviv. University,** mass fluctuations and self-interaction of
 charged particles

3.2 Teaching activities

2005 - date **Shenkar College of Engineering and Design:** Electromagnetic
 Fields, Propagation of Electromagnetic Waves, Random Signal and
 Noise, Microwaves and Antennas, Electronic circuits and Energy
 Conversion.
2003 - 2013 **Bar Ilan University:** Energy Conversion, Transmission Lines and
 Microwaves.
2011 - 2015 **Shamoon College of Engineering:** Energy Conversion, Microwaves
 and Antennas, Electronic circuits
2010 **Afeka college of engineering:** Electromagnetic Fields

Remark: very good students polls at all the teaching activities

3.3 Advising master student

From November 2018, advisor for master degree research. Subject: **Fundamental processes of interaction between electron beams and electromagnetic radiation.**

3.4 R&D activities in the hi-tech industry

2009-2010 Rayv, adviser on digital video and audio multiplexing, synchronization, compatibility and other algorithmic issues.

2009-2010 Orckit Corrigent, adviser on digital video and audio algorithmic issues.

1995-2009 Scopus Video Networks, R&D in Digital Video Compression: RT Multiplexing for MPEG systems, Audio-Video synchronization, buffer management, algorithms and control for MPEG compression, Digital video compatibility and interoperability issues - see patents below.

1991-1994 Tadiran, Algorithms for Military video compression, modulation methods for Toll Road project – innovations which became part of the **Electronic Toll System** patent - see patents below.

4. Grants and awards

1992 Wolf Scholarship

2016 excellence in teaching award

2018 ISF grant 1025/18, research subject: *Fundamental Radiative Processes and new Radiative Interaction schemes of Free Electron Beams*

5. List of publications

5.1 Peer reviewed papers (including under review)

1. **R. Iancu** and V. Vulfin, "Radiation from Quasi-TEM insulated transmission lines", (IET Microwaves, Antennas and Propagation, accepted, 2019), 10.1049/iet-map.2018.5239
2. **R. Iancu** and V. Vulfin, "Radiation from free space TEM transmission lines", arXiv:1701.04878 (IET Microwaves, Antennas and Propagation, under review, 2019)
3. A. Gover, **R. Iancu**, A. Friedman, C. Emma, N. Sudar, P. Musumeci and C. Pellegrini, "Superradiant and stimulated-superradiant emission of bunched electron beams", (Reviews of Modern Physics, accepted, 2019)
4. A. Nause, **R. Iancu** and A. Gover, "Correlated electron beam microbunching and shot-noise characterization with near and far field", JOSA B 35(11), pp. 2869-2875 (2018)
5. **R. Iancu** and E. Pollak, "Temporal interference in scattering through a double slit potential", J.

Chem. Phys. 149, 164114 (2018)

6. V. Vulfin, S. Sayfan-Altman and **R. Ianconescu**, "Wireless power transfer for a pacemaker application", Journal of Medical Engineering & Technology, 41(4), pp. 325-332 (2017)
7. **R. Ianconescu** and V. Vulfin, "Analysis of lossy multiconductor transmission lines and application of a crosstalk canceling algorithm", IET Microwaves, Antennas and Propagation, 11(3), pp. 394-401 (2016)
8. **R. Ianconescu** and E. Pollak, "Kramers' theory for diffusion on a periodic potential", Faraday Discussions, 195, pp 111-138 (2016)
9. A. Gover, **R. Ianconescu**, A. Friedman, C. Emma and P. Musumeci, "Coherent emission from a bunched electron beam: superradiance and stimulated-superradiance in a uniform and tapered wiggler FEL", Nucl. Instr. Meth. Phys. Res. A, <http://dx.doi.org/10.1016/j.nima.2016.12.038> (2016)
10. E. Pollak and **R. Ianconescu**, "Kramers' turnover theory: Improvement and extension to low barriers", J. Phys. Chem. A, 120 (19), pp 3155–3164 (2016)
11. D. Gorbonos, **R. Ianconescu**, J. Puckett, R. Ni, N. T. Ouellette, and N. S. Gov, "Long-range acoustic interactions in insect swarms: An adaptive gravity model", New J. Phys., 18, 073042 (2016)
12. V. Vulfin and **R. Ianconescu**, "Transmission of the maximum number of signals through a Multi-Conductor transmission line without crosstalk or return loss: theory and simulation", IET Microwaves, Antennas and Propagation, 9(13), pp. 1444-1452 (2015)
13. **R. Ianconescu** and E. Pollak, "A study of Kramers' turnover theory in the presence of exponential memory friction", J. Chem. Phys., 143 (10), (2015)
14. A. Nause, E. Dyunin, **R. Ianconescu** and A. Gover, "Exact Theory of Optical Transition Radiation in the Far and Near Zones", JOSA B, 31(10), pp. 2438-2445, (2014).
15. E. Pollak and **R. Ianconescu**, "Finite Barrier Corrections to the PGH solution of Kramers' turnover theory", J. Chem. Phys., 140 (15), (2014)
16. **R. Ianconescu**, "TEM waves guided between many conductors", Modern Applied Science, 7(12), (2013).
17. **R. Ianconescu**, J. Tatchen and E. Pollak, "On-the-fly semiclassical study of internal conversion rates of formaldehyde", J. Chem. Phys., 139 (15), (2013).
18. **R. Ianconescu**, "Radiation from charges in the continuum limit", AIP Advances, 3 (6), (June 2013).
19. **R. Ianconescu**, "Plasma radiation losses in the electrostatic limit", Composite Interfaces, 19(3-4), pp 197-207, (2012)
20. **R. Ianconescu**, D. Sohar and M. Mudrik, "An analysis of the Brown-Biefeld effect", Journal of Electrostatics, 69(6), pp 512-521, (2011)

21. **R. Iancu** and E. Pollak, "Semi classical initial value representation study of internal conversion rates", J. Chem. Phys. , 134 (23), (2011).
22. **R. Iancu** and E. Pollak, "Theory of coherent thermal photoinduced electron transfer reactions in polyatomic molecules", Molec. Phys. 104, 11 (2006)
23. **R. Iancu**, M. G. Brik and E. Pollak, "Theory of absorption in the presence of dissipation", New Journal of Physics Focus Issue on 'Brownian Motion and Diffusion in the 21st Century' 7, 22 (2005).
24. **R. Iancu** and E. Pollak, "Photo induced Cooling of Polyatomic Molecules in an Electronically Excited State in the Presence of Dushinskii Rotations", J. Phys. Chem. A, 108, pp. 7778-7784 (2004).
25. **R. Iancu** and L. P. Horwitz, "Energy mechanism of charges analyzed in real current environment", Foundations of Physics Letters, Vol. 16, Number 3, pp. 225-244 (2003).
26. **R. Iancu** and L. P. Horwitz, "Self-Force of a Charge in a Real Current", Foundations of Physics Letters, Vol. 15, Number 6, pp. 551-559 (December 2002).
27. E. Heyman and **R. Iancu**, "Pulsed beam diffraction by a perfectly conducting wedge: Local scattering models", IEEE Trans. Antennas Propagat. , AP-43, 519-528 (1995).
28. **R. Iancu** and E. Heyman, "Pulsed field diffraction by a perfectly conducting wedge: A spectral theory of transient (STT) analysis", IEEE Trans. Antennas Propagat., AP-42, 781-789 (1994).
29. **R. Iancu** and E. Heyman, "Pulsed beam diffraction by a perfectly conducting wedge: Exact Solution", IEEE Trans. Antennas Propagat., AP-42, 1377-1385 (1994).
30. **R. Iancu** and L.P. Horwitz, "Self-force of a classical charged particle", Physical Review A, Vol. 45, Number 7, pp. 4346, (1992).
31. E. Heyman, B.Z. Steinberg and **R. Iancu**, "Electromagnetic Complex Source Pulsed Beam Fields", IEEE Transactions on Antennas and Propagation, Vol. 38, No. 7, pp. 957-963, July 1990.
32. E. Heyman and **R. Iancu**, Pulsed Beam Reflection and Transmission at a Dielectric Interface: part I. Two-Dimensional Fields", IEEE Transactions on Antennas and Propagation, Vol. 38, No. 11, November 1990.

5.2 Conference papers

1. V. Vulfin, N. Verhovsky, S. Sayfan-Altman and **R. Ianconescu**, "Efficiency of differential receiving antenna interfaced to a three-port network", Proceedings of the International Conference on the Science of Electrical Engineering (ICSEE) , Eilat, Israel, December 12-15 (2016)
2. **R. Ianconescu** and V. Vulfin, "Quasi-TEM insulated transmission line radiation losses analysis", Proceedings of the IEEE International Conference on Microwaves, Communications, Antennas and Electronic Systems (COMCAS), Tel-Aviv, 13-15 Nov, 2017
3. S. Sayfan Altman, V. Vulfin, H. Leibovich, R. Heinrich, **R. Ianconescu**, "Lighting strike analysis for drones", Proceedings of the IEEE International Conference on Microwaves, Communications, Antennas and Electronic Systems (COMCAS), Tel-Aviv, 13-15 Nov, 2017
4. **R. Ianconescu**, A. Gover, A. Friedman, C. Emma, P. Musumeci, "Dynamics of superradiant emission by a prebunched e-beam and its spontaneous emission self-interaction", Proceedings of the FEL 2017 Conference, August 20-25, Santa Fe, NM USA, 2017
5. **R. Ianconescu** and V. Vulfin, "Simulation and theory of TEM transmission lines radiation losses", Proceedings of the International Conference on the Science of Electrical Engineering (ICSEE) , Eilat, Israel, November 16-18 (2016)
6. N. Shimonov, V. Vulfin, S. Sayfan-Altman and **R. Ianconescu**, "Design of an implanted antenna inside the human body for a pacemaker application", Proceedings of the International Conference on the Science of Electrical Engineering (ICSEE), Eilat, Israel, November 16-18 (2016)
7. **R. Ianconescu** and V. Vulfin, "TEM Transmission line radiation losses analysis", Proceedings of the 46th European Microwave Week conference, EuMW 2016, London, October 3-7 (2016)
8. A. Gover, **R. Ianconescu**, "Fundamental processes of radiation emission from bunched electron beam", The 18th Israeli Conference on Plasma Science, Ben-Gurion University of the Negev, Beer Sheva, March 2, 2016
9. A. Gover, **R. Ianconescu**, A. Friedman, C. Emma, P. Musumeci, "Fundamental processes of emission from an electron bunch: spontaneous, super-radiant and stimulated-super-radiant", Conference on high Intensity Laser and attosecond science in Israel (CHILI) 2016, Tel-Aviv 22-24 Feb, 2016
10. **R. Ianconescu** and V. Vulfin, "Simulation of lossy multiconductor transmission lines and application of an algorithm to reduce crosstalk", Proceedings of the IEEE International Conference on Microwaves, Communications, Antennas and Electronic Systems (COMCAS), Tel-Aviv, 2-4 Nov, 2015
11. **R. Ianconescu**, E. Hemsing, A. Marinelli, A. Nause and A. Gover, "Sub-radiance and enhanced-radiance of undulator radiation from a correlated electron beam", Proceedings of the FEL 2015 Conference, August 23-28, Daejeon, Korea, 2015

12. A. Gover, **R. Ianconescu**, A. Friedman, C. Emma and P. Musumeci, "Conceptual theory of spontaneous and taper-enhanced superradiance and stimulated superradiance", Proceedings of the FEL 2015 Conference, August 23-28, Daejeon, Korea, 2015
13. **R. Ianconescu** and V. Vulfin, "Simulation for a Crosstalk Avoiding Algorithm in Multi-Conductor Communication", Proceedings of the IEEE 28-th Convention of Electrical and Electronics Engineers in Israel, Eilat, December 3-5, 2014
14. A. Gover, **R. Ianconescu** and A. Nause, "Short wavelength limits for control and measurement of collective micro-dynamic noise suppression/gain", 6th Microbunching Instability Workshop, Trieste, Italy, October 6-8, 2014
15. **R. Ianconescu**, A. Gover and A. Nause, "Spectral Limits and Frequency Sum-rule of Current and Radiation Noise Measurement", Proceedings of the FEL 2014 Conference, August 25-29, Basel, Switzerland, 2014
16. **R. Ianconescu**, "Avoiding crosstalk in multiconductor TEM waveguides", Proceedings of the IEEE International Conference on Microwaves, Communications, Antennas and Electronic Systems (COMCAS), Tel-Aviv, 21 Oct - 23 Oct, 2013
17. **R. Ianconescu**, "Polyphase guided TEM waves", Proceedings of the IEEE 27-th Convention of Electrical and Electronics Engineers in Israel, Eilat, November 14-17, 2012
18. **R. Ianconescu**, "Plasma Radiation Losses in the Electrostatic Limit", First International Conference on Plasma Processing of Organic Materials and Polymers, India, Kerala, November 25-27, 2011 (**Invited talk**)
19. H. Magal, **R. Ianconescu** and P. Meron, "A Robust Error resilient Video Compression algorithm", Proceedings of the IEEE Military Communications Conference, Fort Monmouth NJ, October 2-5, 1994.
20. P. Meron and **R. Ianconescu**, "Advanced Video Communication Links for Unmanned Aerial Vehicles", UV'94 European Aerial Vehicles Conference, Paris, 16-17 June 1994.
21. E. Heyman, **R. Ianconescu** and B.Z. Steinberg, "Complex source Pulsed Beams - new wave functions for local description of time-dependent propagation and diffraction", Conference of IEEE, Israel, Tel-Aviv, March 1989.
22. E. Heyman, **R. Ianconescu** and L.B. Felsen, "Pulsed beam interaction with propagation environments: Canonical example of reflection and diffraction", Proceedings SPIE 1061, Microwave and Particle Beam Sources and Directed Energy Concepts, Los Angeles, CA, January 18-20, 1989.
23. E. Heyman, B.Z. Steinberg and **R. Ianconescu**, "Scalar and Electromagnetic Pulsed Beams: Properties and Applications", Proceedings International Symposium on Electromagnetic Theory,

Sweden, Stockholm, 1989.

5.3 Patents

1. **US patent No 5640687** - Electronic Toll System - Backscattering transponder switchable between a modulator/demodulator and ground
2. **US patent No 20030007516** - System and Method for the Application of a Statistical Multiplexing Algorithm for Video Encoding